What is claimed is:

1. An semiconductor optical integrated device, comprising:

a light-generating region for generating light with a predetermined wavelength; and

a light-modulating region having a first facet for outputting light generated in said light-generating region and modulated in said light-modulating region,

wherein said first facet provides a coating including a first layer closest to said light-modulating region and a second layer, said first layer having a first refractive index and said second layer having a second refractive index greater than said first refractive index, and

wherein said coating shows an anti-reflection characteristic at said predetermined wavelength.

2. The semiconductor optical integrated device according to claim 1, wherein said first layer is made of a material selected from a group of silicon nitride, silicon oxide, silicon oxi-nitride and aluminum oxide.

3. The semiconductor optical integrated device according to claim 2, wherein said second layer is made of a material selected from a group of titanium oxide and tantalum oxide.

4. The semiconductor optical integrated device according to claim 1, wherein said second layer is made of a material selected from a group of titanium oxide and tantalum oxide.

5. The semiconductor optical integrated device according to claim 1, wherein said light-generating region and said light-modulating region further comprise an InP substrate, an n-type InP layer provided on said InP substrate, an active layer provided on said n-type InP layer, and a p-type InP layer provided on said active layer.

6. An semiconductor optical device, comprising:

a light-generating region for generating light with a predetermined wavelength;

a first facet; and

a second facet, said first facet and said second facet sandwiching said light-generating region therebetween,

wherein said first facet provides a coating including a first layer closest to said light-generating region and a second layer, said first layer having a first refractive index and said second layer having a second refractive index greater than said first refractive index, and

wherein said coating shows an anti-reflection characteristic at said predetermined wavelength.

7. The semiconductor optical device according to claim 6, wherein said first layer is made of a material selected from a group of silicon nitride, silicon oxide, silicon oxi-nitride and aluminum oxide.

8. The semiconductor optical device according to claim 7, wherein said second layer is made of a material selected from a group of titanium oxide and tantalum oxide.

9. The semiconductor optical device according to claim 6, wherein said second layer is made of a material selected from a group of titanium oxide and tantalum oxide.

10. The semiconductor optical device according to claim 6, wherein said light-generating region further comprise an InP substrate, an n-type InP layer provided on said InP substrate, an active layer provided on said n-type InP layer, and a p-type InP layer provided on said active layer.